

TARIFF ACTION MEMORANDUM

File No.: TA503-8 and TA383-121

Date: April 23, 2021
Date Filed: March 15, 2021
End Date: April 29, 2021

Name of Utility: Chugach Electric Association, Inc.

Synopsis:

Chugach Electric Association, Inc. submits TA503-8, its annual update to the Generation and Transmission Line Loss Factor calculation based on 2021 operating results. In addition, Chugach Electric Association, Inc. submits TA383-121, seeking to add the annual Generation and Transmission Line Loss Factor to its North District tariff.

Tariff Recommendations:

The Commission should:

1. Approve Tariff Sheet Nos. 103.4 and 103.5, filed March 15, 2021, by Chugach Electric Association, Inc. with TA503-8, as shown on the attached side-by-side tariff sheets (BA-1). The effective date of the tariff sheets should be May 1, 2021.
2. Approve Tariff Sheet Nos. 122 and 123, filed March 15, 2021, by Chugach Electric Association, Inc. with TA383-121, as shown on the attached side-by-side tariff sheets (BA-2). The effective date of the tariff sheets should be May 1, 2021.

Reason(s) for the above-indicated recommendations: See attached memorandum.

Signed: Becki Alvey
Becki Alvey

Title: Utility Tariff Analyst

Commission decision regarding these recommendations:

	Date (if different from 4/23/2021)	<u>I CONCUR</u>	<u>I DO NOT CONCUR</u>	<u>I WILL WRITE A DISSENTING STATEMENT*</u>
Pickett		<u>RMP</u>		
Kurber		<u>KKI</u>		
Scott		<u>AGS</u>		
Sullivan		<u>DS</u>		
Wilson		<u>JWW</u>		

* If this column is initialed, Staff will contact the Commissioner for the statement; otherwise, the dissent will simply be noted at the close of the By Direction letter or order.

STATE OF ALASKA
The Regulatory Commission of Alaska
701 West 8th Ave., Suite 300
Anchorage, Alaska 99501-3469

T A R I F F A C T I O N M E M O R A N D U M

To: Robert M. Pickett, Chairman
Keith Kurber II
Antony Scott
Daniel A. Sullivan
Janis W. Wilson

Date: April 23, 2021

From: Becki Alvey, Utility Tariff Analyst

Subject: TA503-8 and TA383-121, Chugach Electric Association, Inc.
Annual Update to the Generation and Transmission Line Loss Factor

STATEMENT OF CASE

Chugach Electric Association, Inc. (Chugach) submits TA503-8, its annual update to the Generation and Transmission Line Loss Factor (G&T Line Loss Factor) calculation based on 2020 operating results. In addition, Chugach submits TA383-121, seeking to add the annual G&T Line Loss Factor to its North District tariff.

RECOMMENDATIONS

The Commission should:

1. Approve Tariff Sheet Nos. 103.4 and 103.5, filed March 15, 2021, by Chugach with TA503-8, as shown on the attached side-by-side tariff sheets (BA-1). The effective date of the tariff sheets should be May 1, 2021.
2. Approve Tariff Sheet Nos. 122 and 123, filed March 15, 2021, by Chugach with TA383-121, as shown on the attached side-by-side tariff sheets (BA-2). The effective date of the tariff sheets should be May 1, 2021.

BACKGROUND

Chugach has historically served both retail and large wholesale customers. While the retail customers typically make use of Chugach's Generation and Transmission (G&T) and distribution systems, the wholesale customers only utilize Chugach's G&T system. Therefore, Chugach's aggregate line loss across its transmission and distribution systems must be segregated to properly allocate the losses to the appropriate system users.

The G&T Line Loss Factor is used for the allocation of system costs between Chugach's G&T system and its distribution system. The G&T Line Loss Factor impacts all customers of Chugach, as it is used in the determination of base energy rates, the Cost of Power Adjustment (COPA) surcharge, and losses associated with transmission wheeling transactions. At this time, Chugach currently has approximately 82,000 retail service

locations and one wholesale customer in its South District and 31,000 retail service locations in its North District.¹

The Commission instituted an investigation of Chugach's G&T line loss calculation methodology with Order No. U-99-106(1).² In addition to Chugach, Matanuska Electric Association, Inc. (MEA); Homer Electric Association, Inc. (HEA); Alaska Electric Generation & Transmission Cooperative, Inc.; and the Commission's Public Advocacy Section were designated as parties to the proceeding. With concurrence of the Commission,³ the parties to Docket No. U-99-106 hired an independent consultant (Black & Veatch) to study Chugach's G&T system and recommend a methodology for calculating Chugach's G&T system line losses. The Commission accepted the Black & Veatch Study (B&V Study) and required the parties to seek stipulation regarding the report recommendations.⁴

In Order No. U-99-106(12), the Commission accepted a stipulation between the parties, setting out standard rules, procedures, discovery, and methodology for the calculation of the G&T Line Loss Factor (Stipulation).⁵ The Stipulation sets out the terms and conditions for the filing of annual updates.⁶

TA402-8, Chugach's update to the G&T Line Loss Factor using 2014 operating results, was filed on March 15, 2015, as MEA was disconnecting from the Chugach system and led to questions about whether or not the existing G&T line loss factor methodology was appropriate going forward.⁷ Ultimately, the Commission approved the tariff sheets filed with TA402-8 and required Chugach to file a report on a planned September 17, 2015, meeting between Chugach and its affected shareholders. Chugach filed the required report on September 24, 2015, summarizing the four months of data to be reviewed at the September 17, 2015, working group meeting, and identifying the attendees, major points of discussion, and conclusions reached by the working group.⁸ An additional

¹ Chugach's wholesale customer is the City of Seward. See tariff advice letters for TA503-8 and TA383-121, at page 1.

² Order No. U-99-106(1), *Order Suspending Operating of Tariff Revision; Instituting Investigation; Naming Parties; and Requiring Filing*, issued September 16, 1999.

³ See Order No. U-99-106(4), *Order Affirming Oral Ruling Vacating Public Hearing, Granting Motions to Accept Late Filing of Reports; Establishing Filing Date, and Re-Scheduling Public Hearing*, issued July 12, 2000.

⁴ See Order No. U-99-106(6), *Order Accepting Chugach Generation and Transmission Line Loss Study, Establishing Filing Date, and Scheduling Workshop*, issued July 2, 2002.

⁵ See Order No. U-99-106(12), *Order Accepting Stipulation and Resolving Remaining Disputed Issues, Subject to Conditions; and Requiring Filing*, issued September 18, 2003 (Stipulation attached as Appendix). The Parties to the Stipulation were Chugach, MEA, HEA, and Alaska Electric Generation & Transmission Cooperative, Inc. (AEG&T) now known as Alaska Electric & Energy Cooperative, Inc. (AEEC). See Order No. U-01-104(1), issued June 19, 2002 transferring AEG&T to AEEC.

⁶ These annual filings are due "in approximately March of each year". See Stipulation, at paragraph 7.

⁷ See tariff advice letter for TA402-8, received March 16, 2015.

⁸ See Letter Order No. L1500231, issued April 27, 2015. Attendees included representatives from Chugach, MEA, Municipal Light and Power (ML&P), and the City of Seward (SES). Invitations were sent to the Department of Law Regulatory Affairs and Public Advocacy section and Golden Valley Electric Association, Inc. (GVEA) (See supplemental filing to TA402-8, received September 24, 2015, at page 1.)

meeting was held on November 19, 2015, to discuss updated G&T Line Loss factors.⁹ At that meeting, an updated calculation was provided for comment and attendees discussed removing losses supplied by others; moving the interchange point from the Douglas Substation to the Teeland Substation; and adjusting for generation step-up transformer losses and adjusting for measurement points taken on the low side of transformers.¹⁰ A final meeting was held on February 18, 2016, which Chugach stated was very productive and produced no significant findings or discernable changes in the results.¹¹ TA503-8 is the sixth annual revision of the G&T Line Loss factor since TA402-8.

In Order No. U-18-102(44)/U-19-020(39)/U-19-021(39), the Commission conditionally approved the acquisition of most of the Municipality of Anchorage d/b/a Municipal Light and Power's (ML&P) assets by Chugach. The service area formerly served by ML&P is known as the North District.¹²

Chugach now submits TA503-8 and TA383-121, updating the G&T Line Loss Factor based upon the 2020 system configuration and operating results. This update includes the addition of the North District. A public notice was issued for TA503-8 and TA383-121 on March 18, 2021, with comments requested by April 19, 2021. No comments were received.

ANALYSIS

Generation and Transmission Line Loss

Typically, line loss is part of the overall costs within a revenue requirement study (RRS). An RRS can only be filed after the end of the test year. Once the RRS is filed with the Commission, the Commission has up to 450 days (approximately 15 months) to rule on the filing.¹³ There is at least a two or three year lag before rates would change to reflect a change in line loss. Due to Chugach's historically large wholesale power customers and the complexity of Chugach's system, a different approach for Chugach's line loss calculations was established by the Stipulation accepted in Order No. U-99-102(12). A specific methodology was adopted and annual true-ups were required, avoiding the regulatory lag typical with most utility line loss calculations.¹⁴

In reviewing Chugach's annual G&T Line Loss filing, Staff must verify that the proposed calculations were accurately prepared using the methodology approved in the B&V Study, and that Chugach followed the proper notice and discovery procedures approved in the Stipulation. Staff must also verify that the tariff sheets accurately reflect the proposed revisions.

⁹ See supplemental filing for TA402-8, received December 4, 2015. Attendees at this meeting were representatives from Chugach, GVEA, MEA, HEA, ML&P, and SES.

¹⁰ *Id.*, at page 2.

¹¹ See tariff advice letter for TA454-8, at page 2.

¹² See Certificate No. 121 Tariff Sheet No. 8, effective December 23, 2020.

¹³ AS 42.05.175(c)

¹⁴ See Order No. U-99-106(12), pages 2-3.

Cost Responsibility

An increase in the G&T Line Loss Factor results in a shift of the annual cost responsibility from distribution to G&T. There is however, no impact on the total revenues. Changes in the G&T Line Loss Factor directly impact the allocation of costs among customer classes at the bulk power (G&T) level. Chugach states:

[T]he updated loss factor will decrease total G&T cost responsibility to Seward Electric System by approximately \$9,000 and Chugach retail will increase by approximately \$9,000. In addition, there is no rate impact on third party transmission customers since Chugach is not changing its transmission wheeling rates. The update has no impact on Chugach's system revenue.¹⁵

Table 1 is a summary of the previous G&T Line Loss Factors for Chugach measured at generation.¹⁶

TABLE 1

Summary of Previous G&T Loss Factors			
Test Year	Percent	Test Year	Percent
2020	2.235%	2015	2.414%
2019	2.677%	2014	2.312%
2018	2.589%	2013	2.486%
2017	2.207%	2012	2.875%
2016	2.810%		

Note: Measured at generation

Notice Procedure

Chugach provided preliminary calculations to HEA, MEA, and the Attorney General's office (AG) for review and comment. Chugach also provided preliminary calculations and work papers to GVEA and SES. A meeting was held on February 12, 2021 to discuss the updated calculations and 2020 test year results. Chugach states that, based on input from other utilities and subsequent discussion, no changes to the calculation were required.¹⁷

Calculation

Staff reviewed all supporting documentation and verified that the G&T Line Loss Factor calculations were developed according to the stipulation approved with U-99-106(12).¹⁸

As shown in the Table 2, the proposed G&T Line Loss factor filed with TA503-8 decreased 0.442%, and the adjusted distribution losses increased 522 MWh from the G&T Line Loss

¹⁵ See tariff advice letters for TA503-8 and TA383-121, at page 1.

¹⁶ Staff notes that Chugach calculates its G&T Line Loss factor at generation and at delivery. The difference between the factors is based on whether losses are being calculated using measurement of power inputs (at generation) or using the measurement of power delivery from the transmission system (at delivery). The two factors would allow the calculation of the same losses, regardless of whether inputs (at generation) or outputs (at delivery) were being used in the calculation.

¹⁷ See tariff advice letters for TA503-8 and TA383-121, at page 2.

¹⁸ See Order No. U-99-106(12), at page 7 of the appendix.

factors approved with TA483-8, the most recently approved G&T Line Loss factor revision. The calculations were developed using actual kWh generation, purchases, and sales for 2019 and 2020.¹⁹

Table 2

Line	Description	Current TA483-8 Test Year 2019	Proposed TA503-8 Test Year 2020	Difference
1	GENERATION & TRANSMISSION LOSSES			
2	Total Energy Entering System	1,842,119	2,470,043	627,924
3	Total Energy Leaving System	<u>1,807,096</u>	<u>2,422,445</u>	<u>615,350</u>
4	Gross Energy Losses	35,023.7	47,597.7	12,574
5	Add Line and Service Losses			-
6	Less Transformer Losses	<u>5,286.0</u>	<u>5,325.8</u>	<u>40</u>
7	Total Energy Losses	29,737.7	42,271.9	12,534
8	Add 1/2 House Power	<u>2,082.2</u>	<u>4,213.1</u>	<u>2,131</u>
9	Adjusted Generation & Transmission Losses	<u>31,819.9</u>	<u>46,485.0</u>	<u>14,665</u>
10	Generation & Transmission Deliveries	1,156,843	2,033,302	876,459
11	Percentage at Delivery (line 9 / line 10)	2.751%	2.286%	-0.464%
12	Percentage at Generation (line 9 / (line 9 + line 10))	2.677%	2.235%	-0.442%
13	RETAIL DISTRIBUTION LOSSES			
14	Net Retail Receipts at Transmission	1,095,970	1,967,720	871,750
15	Retail Sales at Delivery	<u>1,055,740</u>	<u>1,892,980</u>	<u>837,240</u>
16	Gross Losses	40,230.2	74,740.4	34,510
17	Adjust for House Power	<u>2,082</u>	<u>4,213</u>	<u>2,131</u>
18	Adjusted Retail Distribution Losses	<u>42,312</u>	<u>78,954</u>	<u>36,641</u>
19	Percentage at Delivery (line 18 / line 15)	4.008%	4.171%	0.163%
20	Percentage at Transmission Substation (line 18 / line 14)	3.861%	4.012%	0.152%

Bradley Lake Project Management Committee

With TA454-8, Chugach stated that “Chugach has continued to reflect the decision by the Bradley Lake Project Management Committee for reimbursement of non-HEA Bradley Lake losses through Bradley Lake generation.” Additionally, Chugach stated that if the decision to calculate losses changes from Quartz Creek to Soldotna, Chugach’s G&T loss factor would increase. Depending on timing and the number of months remaining until the next loss factor update, Chugach may update the loss factor. By design, the update of the loss factor on an annual basis allows Chugach to routinely incorporate changes in system operations with minimal lag in the process.²⁰ In its tariff advice letter for TA503-8, Chugach stated consistent with prior year calculations, losses from Bradley Lake to Quartz Creek are not included in Chugach’s loss factor calculation.²¹

¹⁹ See tariff advice letter for TA483-8, at Attachments I and II.

²⁰ See TR1801660, received March 30, 2018.

²¹ See tariff advice letter for TA503-8, at page 2.

Non-HEA Bradley Lake Losses represent transmission losses associated with Bradley Lake wheeling from Chugach, GVEA, MEA, ML&P, and SES. Without consideration of these losses, HEA's retail customers would be paying for losses that are not associated with HEA energy transactions. Currently, HEA is receiving additional generation from Bradley Lake to make-up for non-HEA Bradley Lake losses on the HEA system.²²

Housekeeping Revisions

With TA503-8, Chugach proposes to add the former ML&P generation assets that it acquired in the acquisition and the Eklutna Hydro Electric Power Plant as line items on Tariff Sheet No. 103.4.²³ In addition, with TA383-121, Chugach proposes to add new tariff sheets to add in the calculation for the G&T Line Loss Factor.²⁴

CONCLUSION

With TA503-8, Chugach requests approval of its annual G&T Line Loss Factor for the period beginning June 1, 2021. With TA383-121, Chugach seeks to add the G&T Line Loss Factor into the North District tariff. Chugach calculated its G&T Line Loss Factor based on existing determinations regarding Bradley Lake. Staff has verified that the calculations proposed in TA503-8 and TA383-121 are accurate and reflected the stipulation accepted with Order No. U-99-106(12). Staff recommends the Commission approve:

1. Approve Tariff Sheet Nos. 103.4 and 103.5, filed March 15, 2021, by Chugach with TA503-8. The effective date of the tariff sheets should be May 1, 2021.
2. Approve Tariff Sheet Nos. 122 and 123, filed March 15, 2021, by Chugach with TA383-121. The effective date of the tariff sheets should be May 1, 2021.

Signature: 
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Janis W. Wilson (Apr 23, 2021 23:32 AKDT)
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²² See TR1403783, received April 25, 2014, response 1.

²³ See side-by-side tariff sheets attached as BA-1.

²⁴ See side-by-side tariff sheets attached as BA-2.

RCA 8 17th Revision Sheet No. 103.4
 Canceling
 16th Revision Sheet No. 103.4

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Chugach Electric Association, Inc.


CALCULATION OF CHUGACH G&T LOSSES
2019 Test Year

Description	Q1-19	Q2-19	Q3-19	Q4-19	Total
Energy Entering System					
Beluga Power Plant	15,599.8	8,595.9	14,439.9	31,154.6	69,790.2
IGT Power Plant	0.0	7.2	220.6	598.8	826.5
Fire Island Wind (IGT Bkr 532)	12,662.1	10,268.3	5,058.1	17,479.3	45,467.9
Southcentral Power Project	317,839.9	282,507.8	296,989.1	306,435.0	1,203,771.8
Quartz Creek Substation	31,319.0	100,893.8	57,024.7	20,374.1	209,611.6
AML&P Plant 2	29,891.9	23,907.7	15,714.1	16,954.3	86,468.0
Teeland Substation	41,954.1	78,202.0	38,133.1	6,813.5	165,102.7
University Substation Bkr 152	1,912.5	882.5	847.1	2,463.1	6,105.3
Douglas Substation	0.0	0.0	0.0	0.0	0.0
Cooper Lake Power Plant	12,519.0	10,117.3	16,692.8	12,818.1	52,147.2
AML&P to ITSS	782.7	1,673.1	335.1	37.2	2,828.2
Total Energy Entering System	464,481.1	517,055.5	445,454.8	415,127.9	1,842,119.3
Energy Leaving System					
Quartz Creek Substation	221.9	160.2	2.4	0.2	384.7
Daves Creek Substation	14,141.5	14,081.3	14,799.4	13,684.4	56,706.6
Douglas Substation	51,303.3	92,310.2	45,938.4	40,068.4	229,620.3
AML&P Plant 2	1,849.1	129.9	1,612.9	741.8	4,333.7
ITSS to AML&P	23,768.3	16,924.0	26,663.2	25,720.3	93,075.8
Teeland Substation	31,494.0	41,411.3	25,164.0	4,491.7	102,561.1
University Substation Bkr 152	24,317.3	78,554.2	51,133.9	21,055.0	175,060.5
Power Plant Station Service Totals	11,628.0	10,714.6	11,059.4	11,816.4	45,218.3
Distribution Substation Deliveries	298,531.0	251,507.6	260,196.6	289,899.4	1,100,134.6
Total Energy Leaving System	457,254.3	505,793.4	436,570.3	407,477.6	1,807,095.6
Gross Energy Losses	7,226.9	11,262.1	8,884.5	7,650.3	35,023.7
Less Transformer Losses	1,321.5	1,321.5	1,321.5	1,321.5	5,286.0
Net G&T Losses	5,905.3	9,940.6	7,562.9	6,328.8	29,737.7

Tariff Advice No.: 483-8

Effective: May 1, 2020

Issued by: Chugach Electric Association, Inc.
 P.O. Box 196300, Anchorage, Alaska 99519-6300

By:  Title: Chief Executive Officer
 Lee D. Thibert

RCA NO.: 8 18th Revision Sheet No. 103.4
 Canceling
 17th Revision Sheet No. 103.4



Chugach Electric Association, Inc.



CALCULATION OF CHUGACH G&T LOSSES
2020 Test Year

Description	Q1-20	Q2-20	Q3-20	Q4-20	Total
Energy Entering System					
Beluga Power Plant	5,068.8	6,098.5	2,648.3	8,109.7	21,925.4
IGT Power Plant	359.4	17.7	13.0	44.3	434.3
Fire Island Wind (IGT Bkr 532)	12,816.2	10,398.1	8,563.8	14,183.7	45,961.8
Southcentral Power Project	329,489.9	248,508.1	289,659.8	282,723.5	1,150,381.3
Plant 1	1,382.0	2,068.8	1,825.1	4,076.3	9,352.2
Plant 2	4,771.3	2,810.8	1,124.5	904.4	9,611.0
Plant 2A	130,766.5	97,915.7	84,036.6	152,548.1	465,266.8
Quartz Creek Substation	130,654.6	97,726.5	89,970.9	94,902.9	413,254.9
Teeland Substation	22,644.4	19,018.7	23,672.2	42,379.9	107,715.2
University Substation Bkr 152	852.6	0.0	17,921.6	21,145.0	39,919.2
Douglas Substation	0.0	0.0	0.0	0.0	0.0
Cooper Lake Power Plant	20,303.1	12,620.7	10,398.5	18,472.1	61,794.4
Eklutna Hydro Electric Power Plant	37,483.4	33,341.6	30,821.1	42,780.2	144,426.3
Total Energy Entering System	696,592.3	530,525.1	560,655.4	682,270.1	2,470,042.9
Energy Leaving System					
Quartz Creek Substation	0.1	11.0	0.0	2.4	13.5
Daves Creek Substation	16,123.7	13,150.2	13,482.2	14,226.2	56,982.3
Douglas Substation	50,521.0	25,371.2	30,450.2	53,334.5	159,676.8
Teeland Substation	22,644.4	19,018.7	23,672.2	42,379.9	107,715.2
University Substation Bkr 152	13,843.1	21,454.5	12,754.6	9,007.9	57,060.1
Power Plant Station Service Totals	18,404.1	14,945.0	15,549.3	15,952.8	64,851.2
South - Distribution Substation Deliveries	312,470.5	242,116.3	247,337.5	297,981.4	1,099,905.8
North - Distribution Substation Deliveries	246,558.1	182,656.5	210,991.7	236,034.0	876,240.3
Total Energy Leaving System	680,564.9	518,723.4	554,237.8	668,919.0	2,422,445.2
Gross Energy Losses	16,027.4	11,801.7	6,417.6	13,351.0	47,597.7
Less Transformer Losses	1,331.5	1,331.5	1,331.5	1,331.5	5,325.8
Net G&T Losses	14,695.9	10,470.3	5,086.1	12,019.6	42,271.9

Tariff Advice No.: 503-8

Effective: May 1, 2021

Chugach Electric Association, Inc.
 P.O. Box 196300 Anchorage, Alaska 99519-6300

TA503-8 and TA383-121

BA-1

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 16th Revision Sheet No. 103.5

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Chugach Electric Association, Inc.

CALCULATION OF CHUGACH G&T LOSSES
2019 Test Year ¹

Description	Q1-19	Q2-19	Q3-19	Q4-19	Total
Chugach Retail Distribution Losses					
Retail Receipts at Transmission Substation	298,531.0	251,507.6	260,196.6	289,899.4	1,100,134.6
Less: Chugach House Power	1,257.7	910.6	886.0	1,110.2	4,164.5
Net Receipts	297,273.3	250,597.1	259,310.6	288,789.2	1,095,970.1
Retail Sales at Delivery	286,058.5	241,658.7	249,930.7	278,092.1	1,055,739.9
Losses	11,214.8	8,938.4	9,379.9	10,697.1	40,230.2
Add: 1/2 House Power	628.9	455.3	443.0	555.1	2,082.2
Adj. Retail Dist. Losses	11,843.6	9,393.6	9,822.9	11,252.2	42,312.4
At Delivery	4.140%	3.887%	3.930%	4.046%	4.008%
At Transmission Substation	3.984%	3.749%	3.788%	3.896%	3.861%
Adjustment of G&T Losses for House Power					
G&T Deliveries	312,674.0	265,588.9	274,996.0	303,583.7	1,156,842.6
Net G&T Losses	5,905.3	9,940.6	7,562.9	6,328.8	29,737.7
Add: 1/2 House Power	628.9	455.3	443.0	555.1	2,082.2
Adjusted G&T Losses	6,534.2	10,395.9	8,006.0	6,883.9	31,819.9
At Delivery	2.090%	3.914%	2.911%	2.268%	2.751%
At Generation	2.047%	3.767%	2.829%	2.217%	2.677%

¹ G&T loss factor effective for the allocation of actual costs beginning January 1, 2020.

Tariff Advice No.: 483-8

Effective: May 1, 2020

Issued by: Chugach Electric Association, Inc.
 P.O. Box 196300, Anchorage, Alaska 99519-6300

By:

Lee D. Thibert
 Lee D. Thibert

Title: Chief Executive Officer

RCA NO.: 8 18th Revision Sheet No. 103.5
 Canceling
 17th Revision Sheet No. 103.5



Chugach Electric Association, Inc.



CALCULATION OF CHUGACH G&T LOSSES
2020 Test Year ¹

Description	Q1-20	Q2-20	Q3-20	Q4-20	Total
Chugach Retail Distribution Losses					
Retail Receipts at Transmission Substation	559,028.6	424,772.8	458,329.3	534,015.4	1,976,146.1
Less: Chugach House Power	2,459.9	1,723.7	1,688.6	2,554.1	8,426.2
Net Receipts	556,568.7	423,049.1	456,640.7	531,461.3	1,967,719.9
Retail Sales at Delivery ²	534,689.7	405,808.6	437,441.7	515,039.6	1,892,979.5
Losses	21,879.1	17,240.5	19,199.1	16,421.7	74,740.4
Add: 1/2 House Power	1,229.9	861.9	844.3	1,277.0	4,213.1
Adj. Retail Dist. Losses	23,109.0	18,102.4	20,043.3	17,698.7	78,953.5
At Delivery	4.322%	4.461%	4.582%	3.436%	4.171%
At Transmission Substation	4.152%	4.279%	4.389%	3.330%	4.012%
Adjustment of G&T Losses for House Power					
G&T Deliveries	575,152.3	438,096.9	471,811.2	548,241.5	2,033,301.9
Net G&T Losses	14,695.9	10,470.3	5,086.1	12,019.6	42,271.9
Add: 1/2 House Power	1,229.9	861.9	844.3	1,277.0	4,213.1
Adjusted G&T Losses	15,925.8	11,332.1	5,930.4	13,296.6	46,485.0
At Delivery	2.769%	2.587%	1.257%	2.425%	2.286%
At Generation	2.694%	2.521%	1.241%	2.368%	2.235%

¹ G&T loss factor effective for the allocation of actual costs beginning January 1, 2021.

² Former Municipal Light & Power 2020 reported retail sales for months January through October were normalized to adjust for calendar month sales.

Tariff Advice No.: 503-8

Effective: May 1, 2021

Chugach Electric Association, Inc.
 P.O. Box 196300 Anchorage, Alaska 99519-6300

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Sheet No. 122

Chugach Electric Association, Inc.



**CALCULATION OF CHUGACH G&T LOSSES
2020 Test Year**

Description	Q1-20	Q2-20	Q3-20	Q4-20	Total
<u>Energy Entering System</u>					
Beluga Power Plant	5,068.8	6,098.5	2,648.3	8,109.7	21,925.4
IGT Power Plant	359.4	17.7	13.0	44.3	434.3
Fire Island Wind (IGT Bkr 532)	12,816.2	10,398.1	8,563.8	14,183.7	45,961.8
Southcentral Power Project	329,489.9	248,508.1	289,659.8	282,723.5	1,150,381.3
Plant 1	1,382.0	2,068.8	1,825.1	4,076.3	9,352.2
Plant 2	4,771.3	2,810.8	1,124.5	904.4	9,611.0
Plant 2A	130,766.5	97,915.7	84,036.6	152,548.1	465,266.8
Quartz Creek Substation	130,654.6	97,726.5	89,970.9	94,902.9	413,254.9
Teeland Substation	22,644.4	19,018.7	23,672.2	42,379.9	107,715.2
University Substation Bkr 152	852.6	0.0	17,921.6	21,145.0	39,919.2
Douglas Substation	0.0	0.0	0.0	0.0	0.0
Cooper Lake Power Plant	20,303.1	12,620.7	10,398.5	18,472.1	61,794.4
Eklutna Hydro Electric Power Plant	37,483.4	33,341.6	30,821.1	42,780.2	144,426.3
Total Energy Entering System	696,592.3	530,525.1	560,655.4	682,270.1	2,470,042.9
<u>Energy Leaving System</u>					
Quartz Creek Substation	0.1	11.0	0.0	2.4	13.5
Daves Creek Substation	16,123.7	13,150.2	13,482.2	14,226.2	56,982.3
Douglas Substation	50,521.0	25,371.2	30,450.2	53,334.5	159,676.8
Teeland Substation	22,644.4	19,018.7	23,672.2	42,379.9	107,715.2
University Substation Bkr 152	13,843.1	21,454.5	12,754.6	9,007.9	57,060.1
Power Plant Station Service Totals	18,404.1	14,945.0	15,549.3	15,952.8	64,851.2
South - Distribution Substation Deliveries	312,470.5	242,116.3	247,337.5	297,981.4	1,099,905.8
North - Distribution Substation Deliveries	246,558.1	182,656.5	210,991.7	236,034.0	876,240.3
Total Energy Leaving System	680,564.9	518,723.4	554,237.8	668,919.0	2,422,445.2
Gross Energy Losses	16,027.4	11,801.7	6,417.6	13,351.0	47,597.7
Less Transformer Losses	1,331.5	1,331.5	1,331.5	1,331.5	5,325.8
Net G&T Losses	14,695.9	10,470.3	5,086.1	12,019.6	42,271.9

Tariff Advice No.: 383-121

Effective: May 1, 2021

Chugach Electric Association, Inc.
P.O. Box 196300 Anchorage, Alaska 99519-6300

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Canceling

Sheet No. 123

Chugach Electric Association, Inc.



**CALCULATION OF CHUGACH G&T LOSSES
2020 Test Year ¹**

Description	Q1-20	Q2-20	Q3-20	Q4-20	Total
Chugach Retail Distribution Losses					
Retail Receipts at Transmission Substation	559,028.6	424,772.8	458,329.3	534,015.4	1,976,146.1
Less: Chugach House Power	2,459.9	1,723.7	1,688.6	2,554.1	8,426.2
Net Receipts	556,568.7	423,049.1	456,640.7	531,461.3	1,967,719.9
Retail Sales at Delivery ²	534,689.7	405,808.6	437,441.7	515,039.6	1,892,979.5
Losses	21,879.1	17,240.5	19,199.1	16,421.7	74,740.4
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¹ G&T loss factor effective for the allocation of actual costs beginning January 1, 2021.

² Former Municipal Light & Power 2020 reported retail sales for months January through October were normalized to adjust for calendar month sales.

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